

Changing household composition and structure in selected local authorities of London and Middlesex during the first decade of the 20th century

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Outline

- Research aim and context
 - Data sources and methods
 - Preliminary results
 - Conclusions
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- Research initiated under a Senior Research Fellowship funded by The British Academy/Leverhulme Trust



Research Aim

- **Aim**

- *Explore the practicalities of capturing household and individual level Population Census Data from censuses carried out early in 20th century and linking these to contemporary 21st census geographies and statistics*

- **Indicative research question**

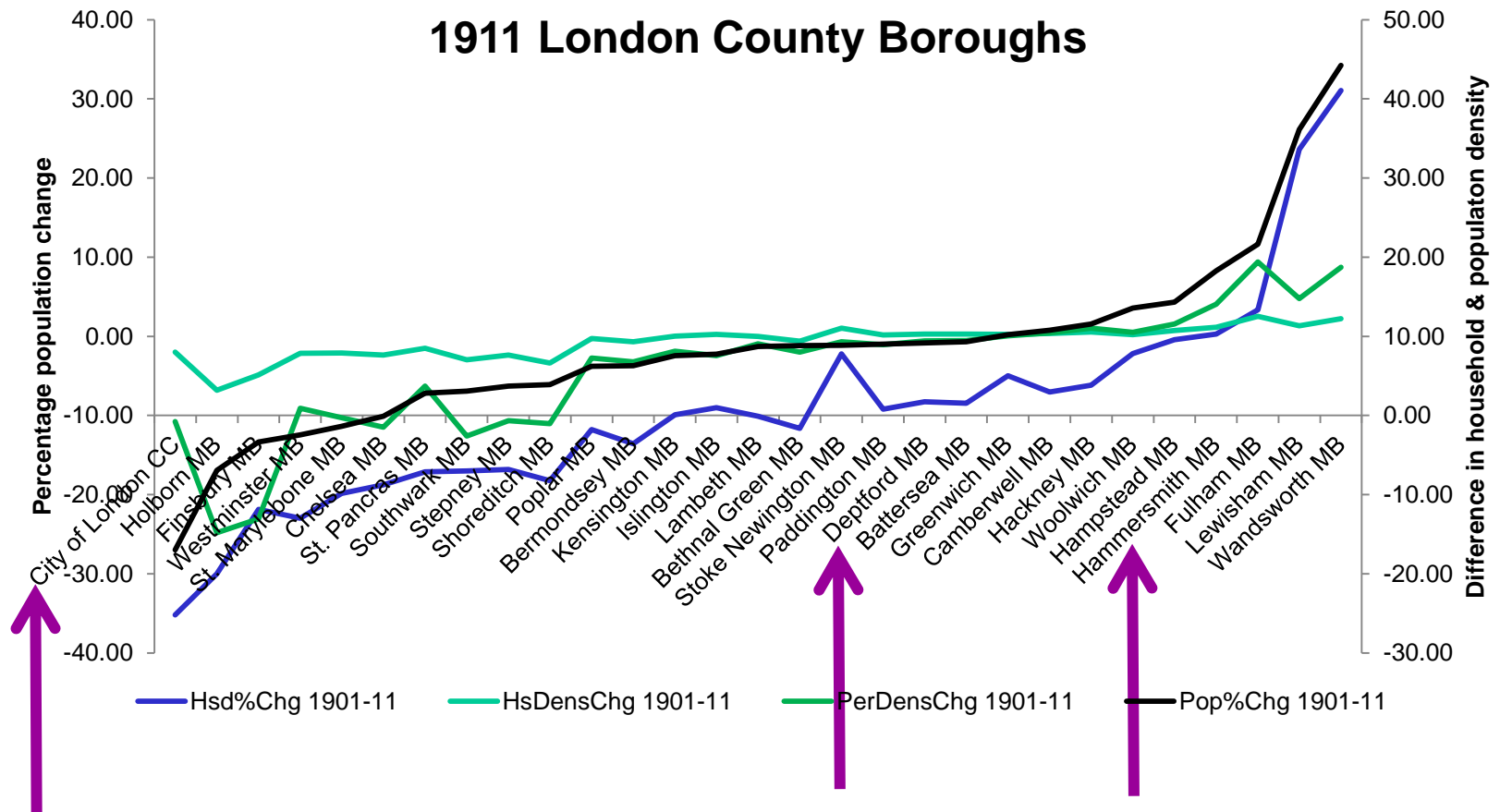
- *What are the similarities and differences in the small area social geography and demography of London and Middlesex in the early 20th and 21st centuries?*
- *Are the areas that were relatively deprived then also less well off now?*

- **Why London**

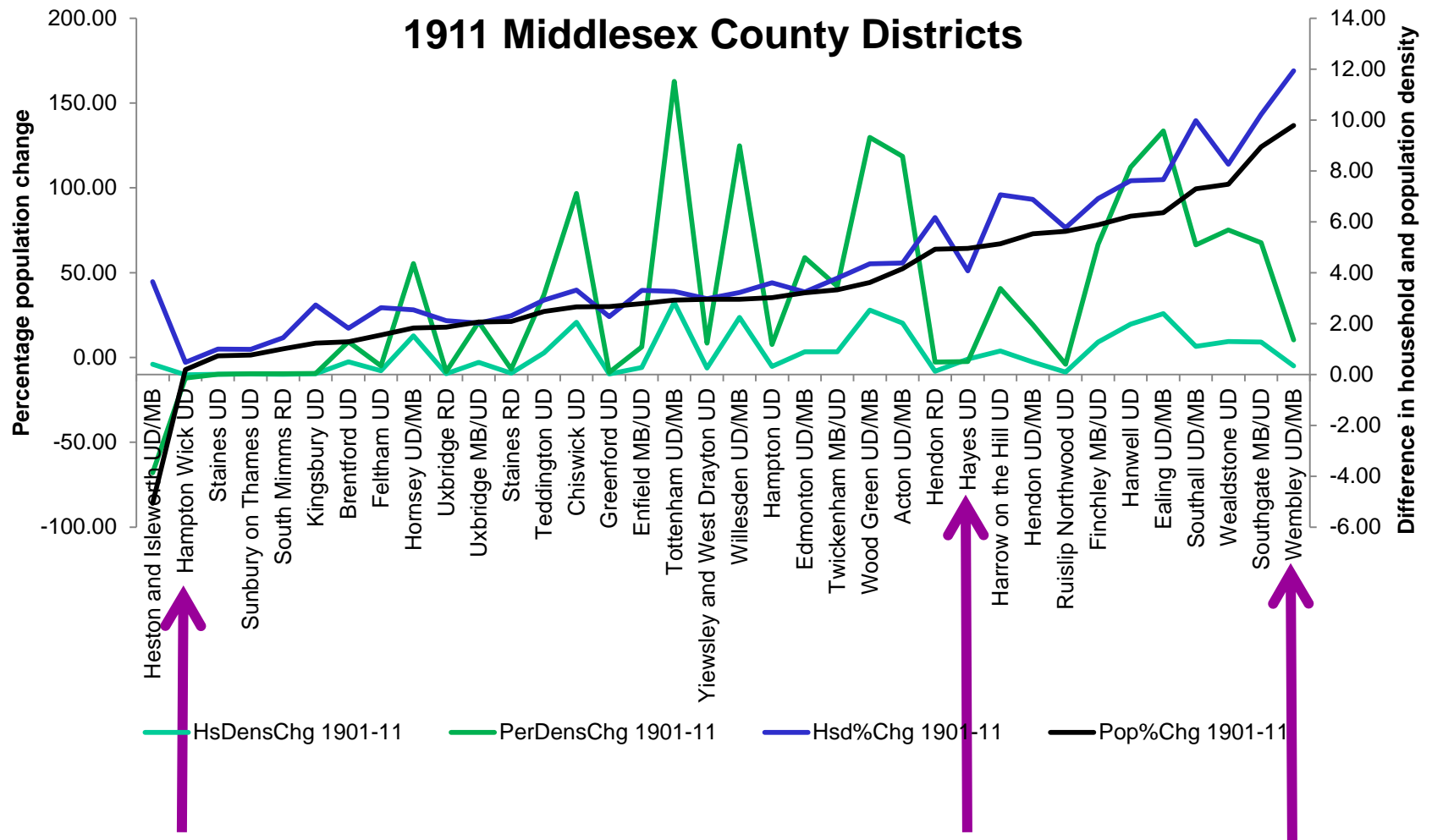
- *Capital city*
- *Link with Booth Poverty maps for end of 19th century*

Selection of London Boroughs

- Boroughs selected with reference to % population change 1901-11
- Numbers of households/persons



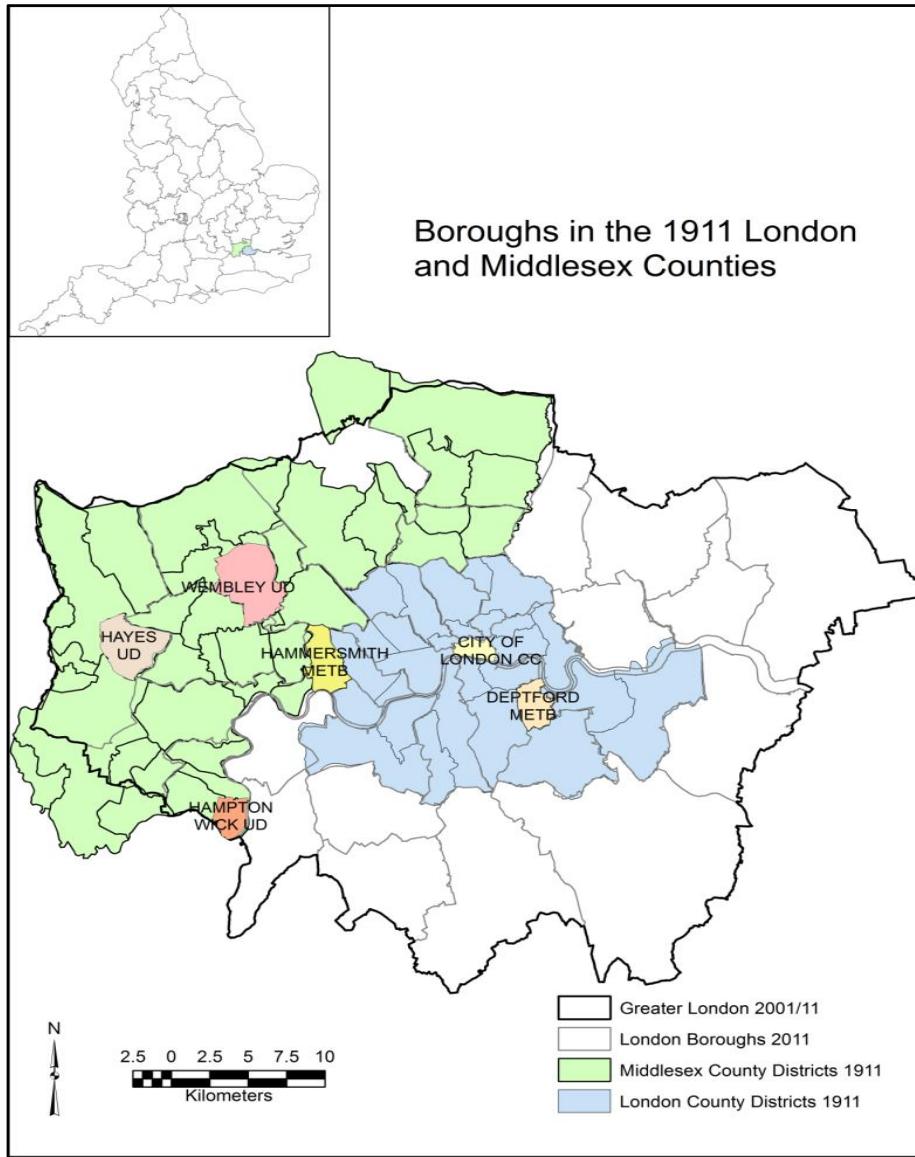
Selection of Middlesex Districts



Selected Boroughs/Districts

	Hs Units1901	Hs Units1911	Popn. 1901	Popn. 1911	% Popn. Chg.	Diff. Hs dens.	Diff. Per dens.
City of London MB	5339	3995	26923	19657	-25.17	-1.99	-10.76
Deptford MB	24,615	25040	110398	109496	1.73	0.27	-0.58
Hammersmith MB	25,810	28462	112239	121521	10.28	1.16	4.06
London County	1,019,048	1,033,861	4,536,267	4,521,685	0.54	-0.71	-3.99
Hampton Wick UB	567	551	2606	2417	-2.82	-0.01	-0.14
Hayes UD	587	887	2594	4261	51.11	0.61	0.50
Wembley UD/MB	905	2434	4519	10696	168.95	0.34	1.35
Middlesex	166,007	249,334	782,066	1,087,465	55.13	0.83	3.30

Borough of Hammersmith



- Former London and Middlesex counties together smaller than contemporary Greater London Authority
- Paper focuses on 1911 Census data for Hammersmith Borough in the former London County



Data Sources

- 20th century
 - 1911, 1901 and potentially earlier Population Census records
 - Ordnance Survey Historical topographic mapping (scanned images)
- 21st century
 - Ordnance Survey Master Map (MM2) topographic map layers
 - Ordnance Survey Master Map Address Layer (MMAL)

1911 Census Schedule

- Example of census schedule illustrating damage curated by The National Archives

CENSUS OF ENGLAND AND WALES, 1911.

Before writing on this Schedule please read the Examples and the Instructions given on the other side of the paper, as well as the headings of the Columns. The entries should be written in Ink.

The contents of the Schedule will be treated as confidential. Strict care will be taken that no information is disclosed with regard to individual persons. The returns are not to be used for proof of age, as in connection with Old Age Pensions, or for any other purpose than the preparation of Statistical Tables.

Number of Schedule **17**
(To be filled up by the Enumerator after collection.)

NAME AND SURNAME	RELATIONSHIP to Head of Family.	AGE (last Birthday) and SEX.	PARTICULARS as to MARRIAGE.				PROFESSION or OCCUPATION of Persons aged ten years and upwards.				BIRTHPLACE of every person.	NATIONALITY of every person born in a Foreign Country.	INFIRMITY.
			Write "Single," "Married," "Widower," or "Widow," opposite the names of all persons aged 15 years and upwards.	State, for each Married Woman entered on this Schedule, the number of— Completed years the present Marriage has lasted. If less than one year write "under one."	Children born alive to present Marriage. (If no children born alive write "None" in Column 7.)	Children still Living.	Children who have Died.	Personal Occupation.	Industry or Service with which worker is connected.	Whether Employer, Worker, or Working on Own Account.			
1. Arthur Braggs	Head	51	Married	17	2	2	Manager, Timber Merchant	Worked	London, St Pancras				
2. Bessie Marion Braggs	Wife	42	Married						London, Dulham				
3. Amelia Kerner	Sister-in-law	35	Single				Private means		London, Dulham				
4. Maria Blekeway	Servant	33	Single				Cook, Domestic	Worked	Staffordshire, Smercethill				
5.													
6.													
7.													
8.													
9.													
10.													
11.													
12.													
13.													
14.													
15.													

(To be filled up by the Enumerator.)

I certify that—
(1) All the ages on this Schedule are entered in the proper age columns.
(2) I have counted the males and females in Columns 3 and 4 separately, and have compared their sum with the total number of persons.
(3) After making the necessary enquiries I have completed all entries on the Schedule which appeared to be defective.

Initials of Enumerator **AB**

Males **13** Females **4** Persons **17**

(To be filled up by, or on behalf of, the Head of Family or other person in occupation, or in charge, of this dwelling.)

Write below the Number of Rooms in this Dwelling (House, Tenement, or Apartment). Count the kitchen as a room but do not count scullery, landing, lobby, closet, bathroom; nor warehouse, office, shop.

I declare that this Schedule is correctly filled up to the best of my knowledge and belief.

Signature **Arthur Braggs**
Postal Address **4 Pauline Road, Dulham, Essex**

1911 Census Transcript

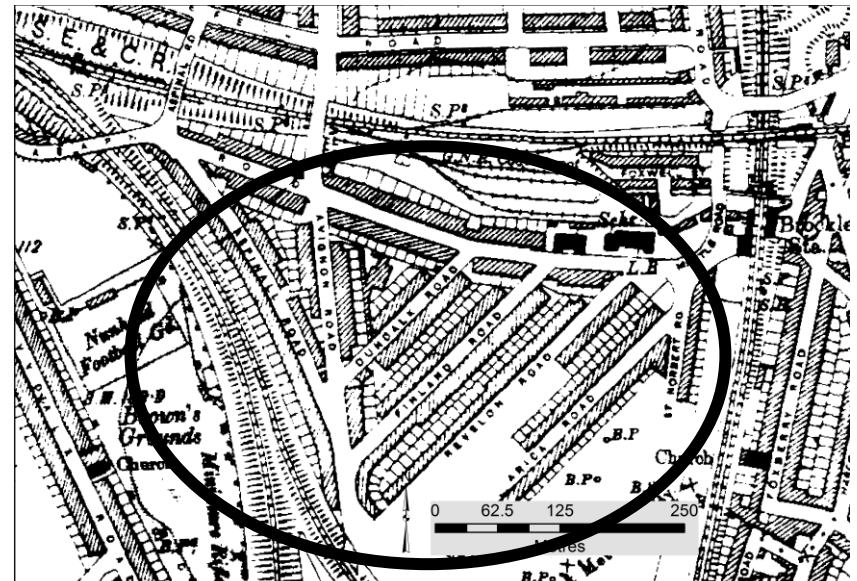
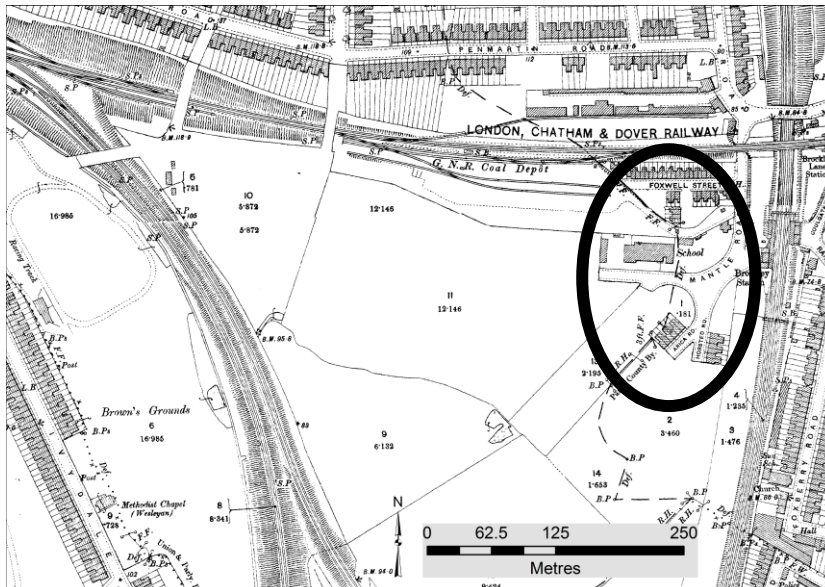
- Attribute data limited to name, relationship in household, sex, age, birth year, occupation and birthplace; address, enumeration district and number of rooms

1901										
Schedule number	House number/name, road/street name	Number of rooms if less than 5	Name and surname	Relationship to head of family	Condition as to marriage	Sex	Age last birthday	Profession or occupation	Birthplace	If: (1) deaf and dumb, (2) blind, (3) lunatic or (4) imbecile, feeble-minded
61	Ivy Cottage, Park Road		John Martin	Head	Married	Male	29	Aras Tapestry weaver	Middx: Hampton Wick	
			Louisa Martin	Wife	Married	Female	26		London: Stepney	
			William Martin	Son		Male	3		Middx: Hampton Wick	

1911																			
					Age and sex		Particulars of marriage					Profession or occupation							
Schedule number	House number/name, road/street name	Number of rooms	Name and surname	Relationship to head of family	Male	Female	Marital status	Completed years of present marriage	Total children born alive	Children still living	Children who have died	Personal occupation	Industry or service	Employment status	Whether working at home	Birthplace	Nationality for persons born in foreign country	If: (1) deaf and dumb, (2) blind, (3) lunatic or (4) imbecile, feeble-minded	
176	Ivy Cottage, Park Road	5	John Martin	Head	39		Married	-	-	-	-	Aras Tapestry weaver		Worker	No	Midd Hampton Wick			
			Louisa Martin	Wife		36	Married	14	2	2	-					London: Stepney			
			William Martin	Son	13			-	-	-	-					Middx: Hampton Wick			
			Doris Martin	Daughter		4		-	-	-	-					Middx: Hampton Wick			

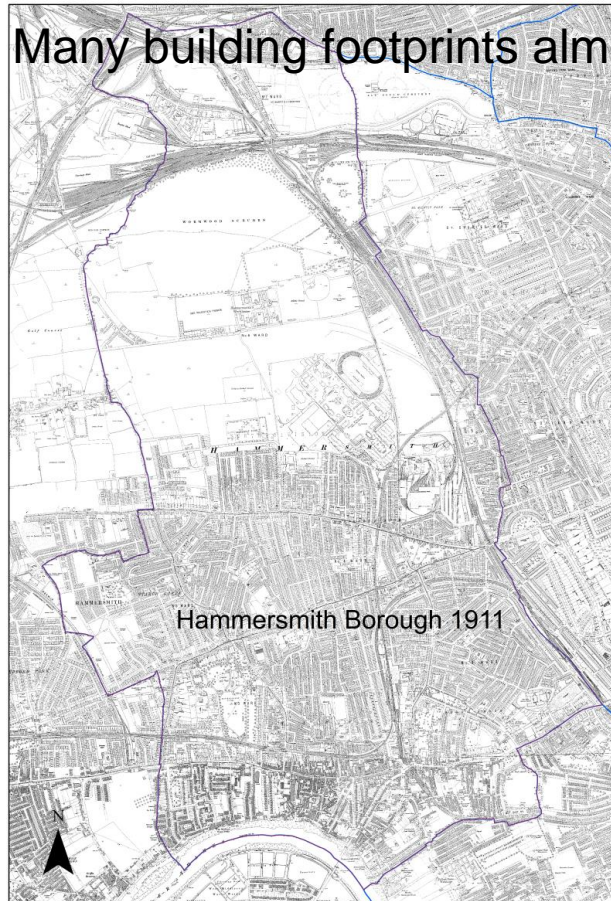
Historical Topographic Maps

- County Series, 1:2,500, First Edition, 1895, Kent
- County Series, 1:2,500, Second Edition, 1916, London
- Example of residential development in Deptford



Historical and Modern OS Maps

- Historical topographic maps scanned and georeferenced by Landmark
- MM2 buildings and address points on land not developed in 1901 and 1911
- Former houses demolished and redeveloped as larger buildings
- Many building footprints almost identical



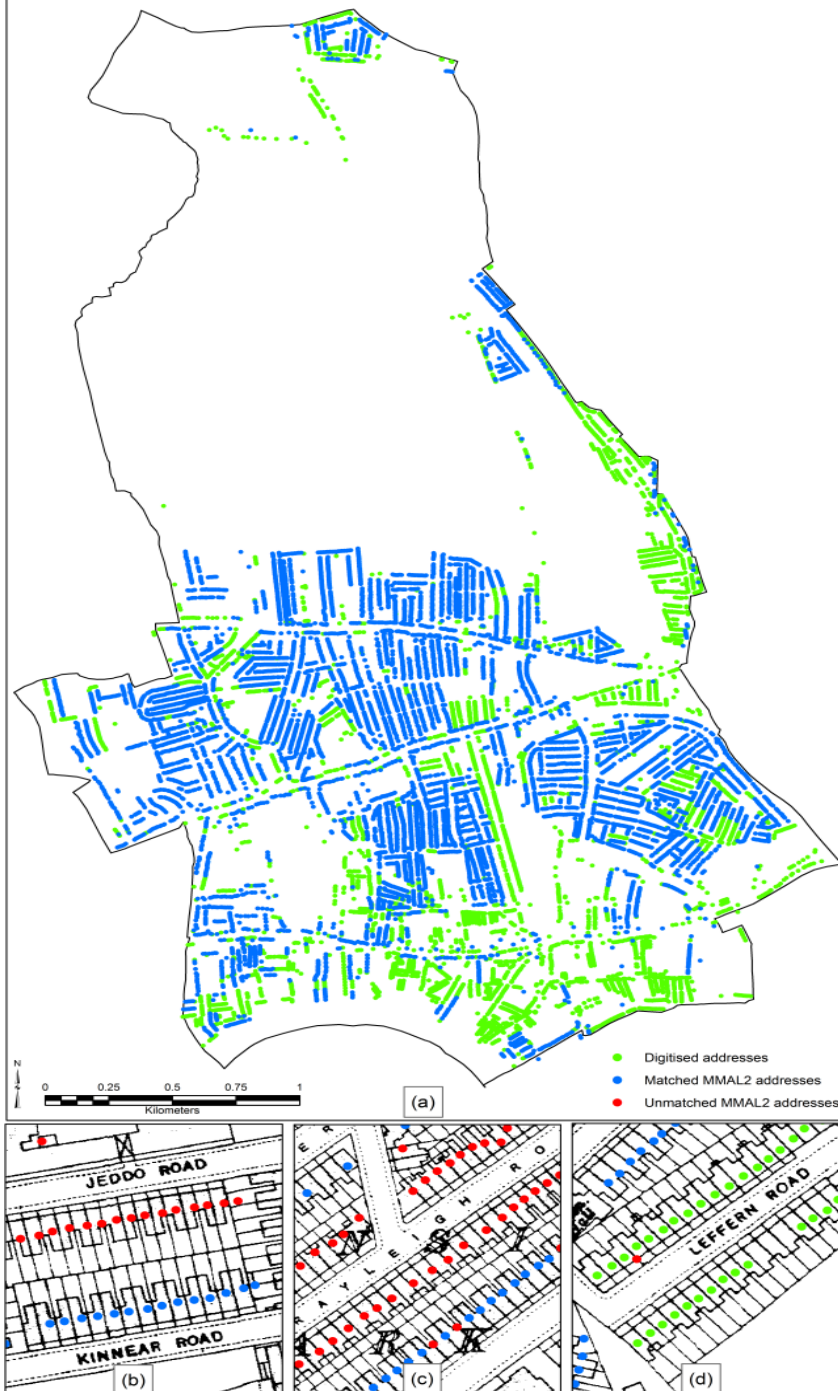


Matching/Geocoding

- Match addresses from transcribed 1901 and 1911 Census records and MMAL2 data; geocode joined spatial and attribute data; and create point features for addresses.
- Examine visualisation of geocoded census addresses alongside MMAL2 addresses; and identify and correct anomalies (e. g. through road name changes).
- Identify non-geocoded addresses from stages 1 and 2 and locate on historic map images; and manually digitise new points and transfer addresses from 1901 and 1911 Census data to additional points.
- Create a unified file of matched spatial and census data for each set of households and individuals in 1901 and 1911.

Examples

- 5,944 (26%) of 1911 census addresses digitised on screen
- Jeddo Road (correct on map and in MM2) incorrectly transcribed as Jedds Road (error in census data > non-match)
- Rayleigh Road became Rayleigh Grove (road name changed > non-match)
- Identify non-geocoded addresses, find them on historic map images and manually digitise new points
- Majority of 1901 addresses also present in 1911



Address Points Hammersmith

- Majority of 1901 addresses also present in 1911



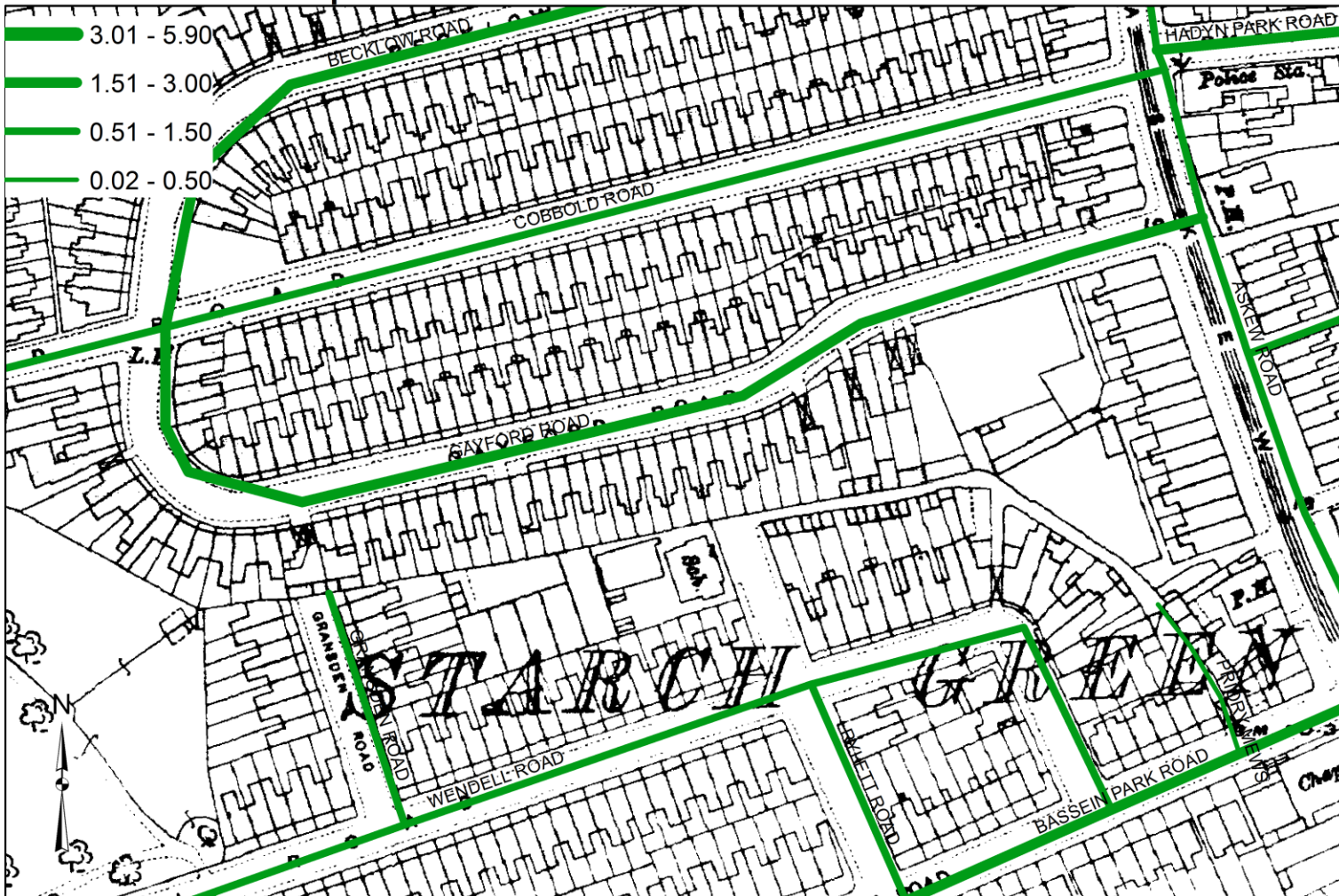


Preliminary Results

- Some initial tabulated results on household size, age structure, place of birth and length of marriage for presented at previous conferences.
- Following slides illustrate some of the micro-scale analyses possible with georeferenced household and individual records.

Measurement of population density along streets

Persons per metre on streets in Hammersmith 1911



Variation in number of separate households per address

Households per 1911 address



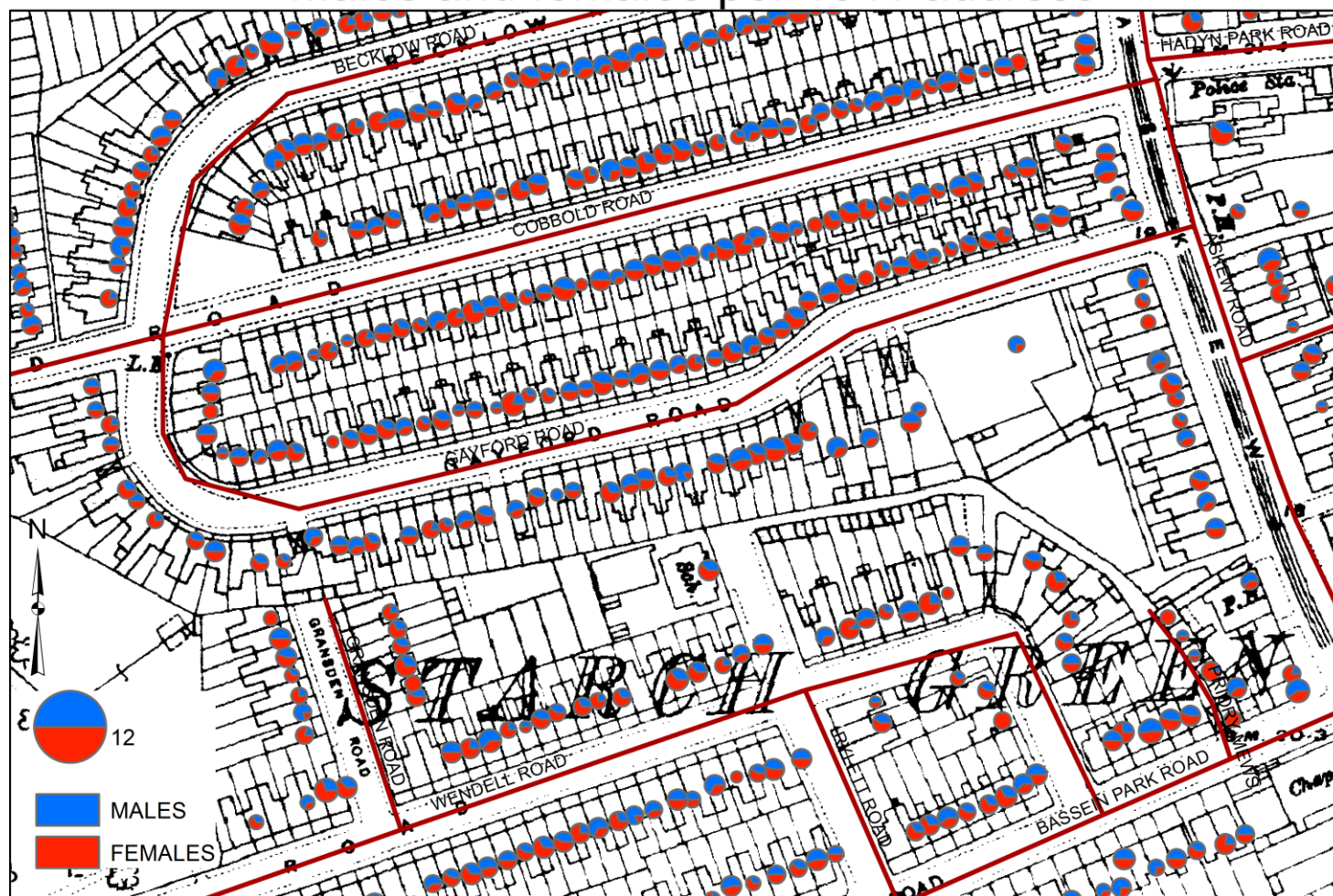
Change in number of persons at addresses 1901 to 1911

Difference in persons per address 1901 to 1911



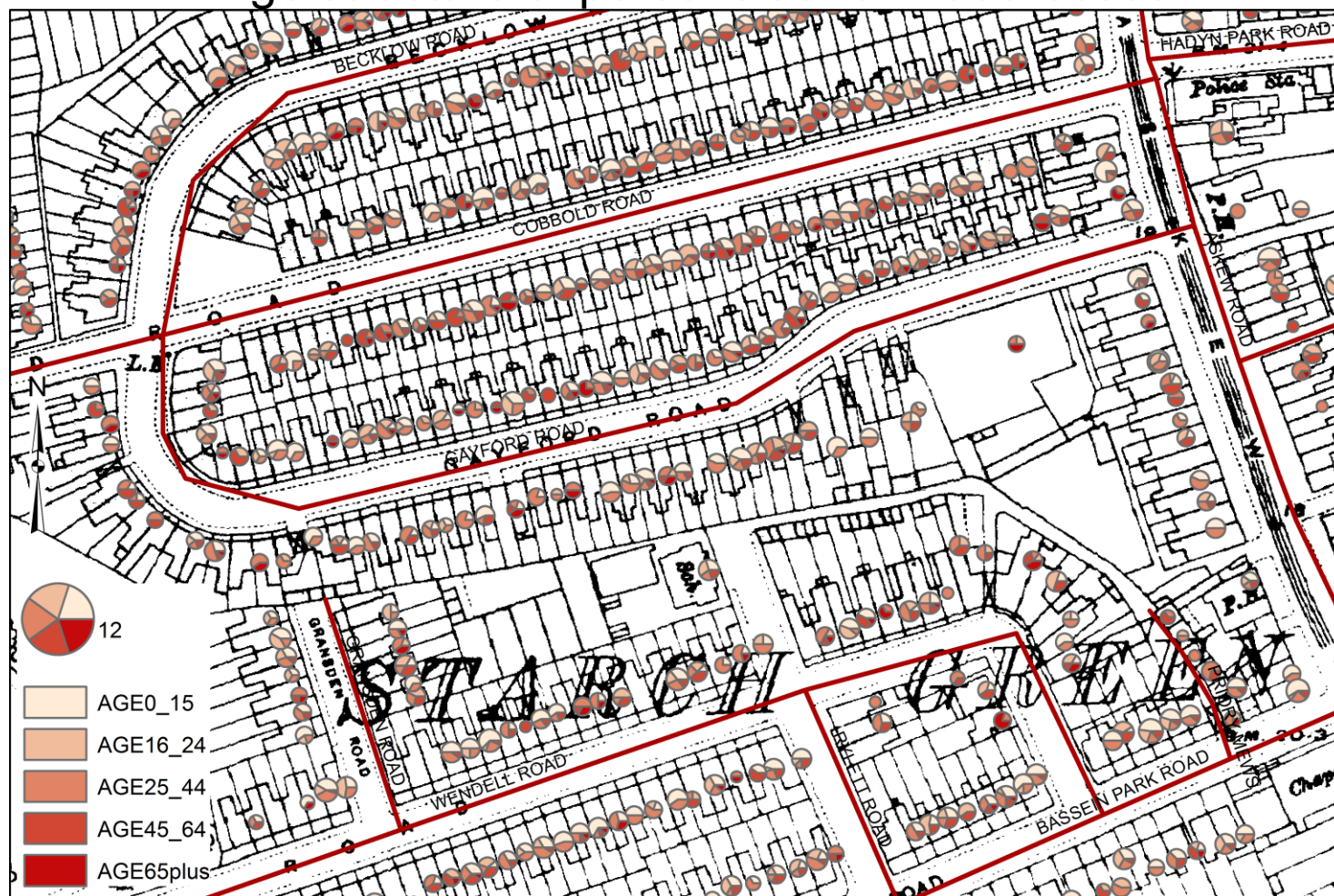
Balance of males and females at addresses in 1911

Males and females per 1911 address



Age structure of persons at addresses in 1911

Age structure of persons at 1911 addresses



Married, single and widowed persons at 1911 addresses

Married, single and widowed persons per 1911 address





Conclusions and Future Work

- Data record linkage feasible, but complexities remain
- Expected and unexpected difficulties of dealing with historic records
- Linkage between historic and modern datasets offers exciting new analytical possibilities
- Analysis of other social and demographic variables
- Potential for linkage with Booth poverty maps in London County Boroughs



Acknowledgments

- Office for National Statistics, 2011 Census: Aggregate data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: <http://infuse.mimas.ac.uk> . This data is licensed under the terms of the Open Government Licence [<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2>]. Office for National Statistics, 2011 Census: Aggregate data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: <http://infuse.mimas.ac.uk> . This data is licensed under the terms of the Open Government Licence [<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2>].
- Office for National Statistics, 2001 Census: Aggregate data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: <http://infuse.mimas.ac.uk> . This data is licensed under the terms of the Open Government Licence [<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2>].
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